

NEW GENERA OF TWO-WINGED FLIES OF THE SUBFAMILY LEPTOGASTRINAE OF THE FAMILY ASILIDAE.

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The present paper is intended primarily to publish a remarkable new genus of fly in which the basal half of the wing is reduced to a slender hairlike stalk. In the study of related forms, however, it appeared that several new genera of the same subfamily are in the United States National Museum collection, and these have also been included, with a table of genera.

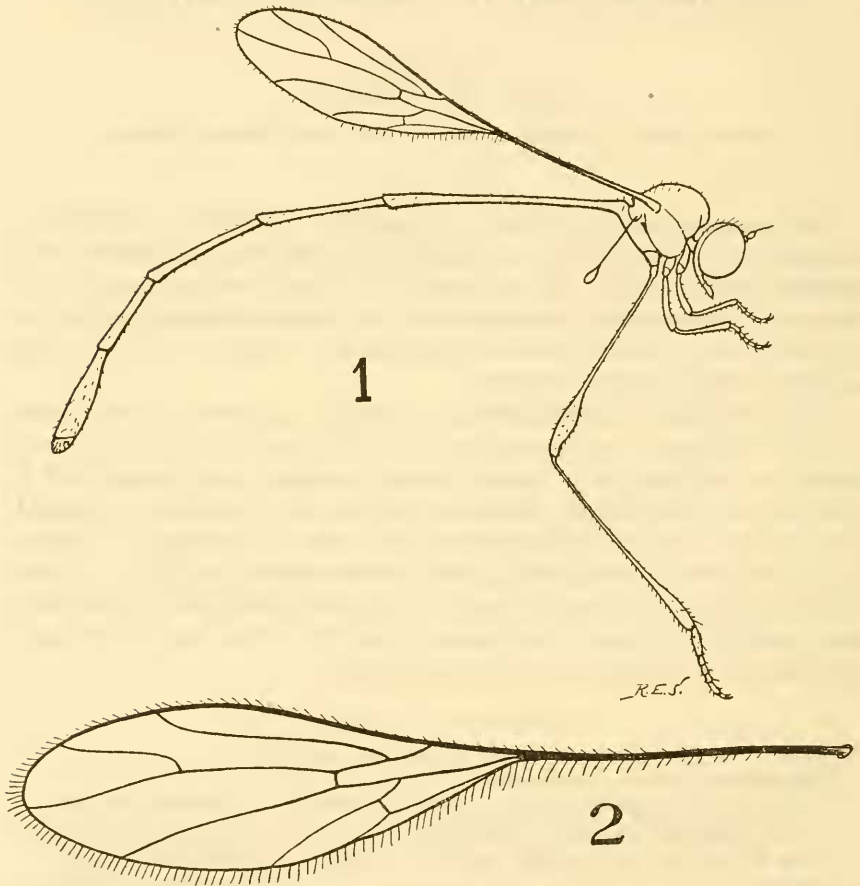
The subfamily Leptogastrinae is readily separated from other Asilidae in America by having the pulvilli absent, the empodia either absent or reduced to a central almost straight claw, about half as long as the other claws; abdomen slender and elongated; marginal cell open, anal angle of wing undeveloped, and cell wide open. In the old world various connecting genera occur without pulvilli. I have included one such American genus, *Caenarolia* Thomson, in the present paper; it is shorter and stouter than the other included forms, and has the anal angle normally developed.

TABLE OF AMERICAN GENERA.

1. Wings uncommonly narrow at base, the seventh vein absent.....	2
Wings normal, seventh vein present.....	3
2. Wing with basal half reduced to a hairlike pedicel, the auxiliary and first veins fused with the costa (Costa Rica).....	<i>Eurhabdus</i> , new genus.
Wing not with slender hairlike basal half, auxiliary and first veins present (Brazil).....	<i>Leptopteronomyia</i> Williston.
3. Mesonotum with a pair of erect dorsocentral bristles, anterior to the middle; veins hairy (Costa Rica).....	<i>Schildia</i> , new genus.
Mesonotum without dorsocentrals (with one pair supraalar and one notopleural)	4
4. Antennal style minute, hardly visible; wings longer than abdomen (Brazil).....	<i>Caenarolia</i> Thomson.
Antennal style at least two-thirds as long as third antennal joint.....	5
5. Empodia entirely absent (widespread).....	<i>Psilonyx</i> , new genus.
Empodia present as a median claw about half as long as the other claws (widespread).....	<i>Leptogaster</i> Meigen.

EURHABDUS, new genus.

Most of the generic characters are well shown in the figure. The wing is greatly reduced in venation. The auxiliary and first longitudinal veins are entirely absent; the third vein originates directly in the costa, which is not especially enlarged; the discal cell is wide open to the margin; the fourth vein is unbranched; there is no



FIGS. 1-2.—1, EURHABDUS ZEPHYREUS, NEW GENUS AND SPECIES, TYPE SPECIMEN. MUCH ENLARGED.
2, WING OF SAME, MORE ENLARGED. DRAWN BY R. E. SNODGRASS.

seventh vein. The basal portion of the wing for almost exactly one-half of the length is reduced to an exceedingly slender hairlike stalk which has a few delicate cilia on both sides. The antennae are very small and there is a slender subdorsal arista instead of the two-jointed thick style occurring in *Leptogaster*. The head is not greatly flattened, almost as large as the thorax; the latter being somewhat moldy, it is impossible to tell whether it originally had any bristles

or not. The empodia are slightly developed in the form of a middle claw which is about one-third as long as the outer ones.

Genotype.—*Eurhabdus zephyreus*, new species.

EURHABDUS ZEPHYREUS, new species.

Female.—Shining black; the orbits and pleurae with white pollen; the front and middle legs, except the coxae, pale yellow; hind legs yellow except the clubbed apical fourth; hind tibiae yellow; the apical third black and considerably swollen; hind tarsi black; halteres long and slender, yellow, with a shining black knob.

Length, 6.2 mm.

Described from one female collected at Higuito, San Mateo, Costa Rica, by Pablo Schild.

Type.—Female, Cat. No. 25307, U.S.N.M.

In order to bring out as clearly as possible the remarkable reduction which the venation in this species has undergone I have had a figure prepared (fig. 3) of the venation of the type species of *Leptogaster* in which dotted lines are used to indicate the veins which are absent in *Eurhabdus*.

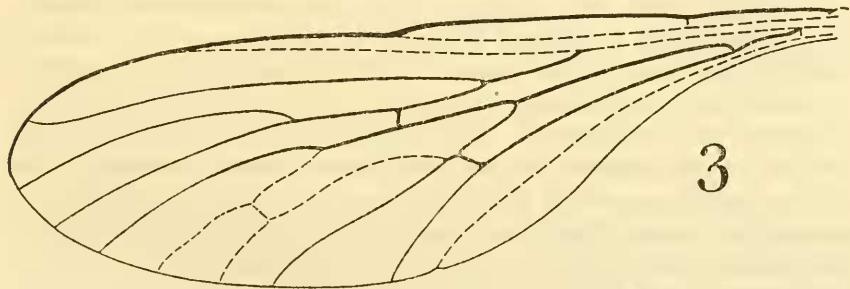


FIG. 3.—WING OF *LEPTOGASTER CYLINDRICA*. THE VEINS INDICATED BY DOTTED LINES ARE ABSENT IN *EURHABDUS*. DRAWN BY CHARLES T. GREENE.

Genus LEPTOPTEROMYIA Williston.

Leptopteromyia WILLISTON, Manual of North America Diptera, ed. 3, p. 195, 1908.

This genus exists only by virtue of a named figure in one of Williston's plates. The type species is *L. gracilis* Williston, named, but not described, on the same page, and said to be from Brazil. The head of the specimen is not figured and probably had been broken off. The general appearance is precisely that of *Leptogaster* except that there is apparently no empodium and the wing is much narrower on the basal half. The figure shows a normal discal cell, no seventh vein, first vein present, and probably the auxiliary. The species can in all probability be recognized without difficulty from the figure when rediscovered. The location of the type specimen at the present time is unknown.

SCHILDIA, new genus.

Differs from all the other members of the group in having hairy veins and a pair of dorsocentral bristles near together before the middle of the mesonotum. Venation as in *Leptogaster*, the first vein, however, running parallel with the costa around the curve almost to the extreme apex of the wing.

Genotype.—*Schildia microthorax*, new species.

Named in honor of Pablo Schild, one of the best tropical collectors of small Diptera.

SCHILDIA MICROTHORAX, new species.

Male and female.—Antennae yellow, the third joint brown, not much elongated with subapical slender style which might be called an arista. Head black, proboscis brown. Mesonotum shining, brownish yellow, extending forward with a considerable hump and bearing a distinct median brown stripe which does not reach the scutellum. The characteristic pair of dorsocentral bristles are very evident and in addition there are the two usual pairs, one supraalar, the other notopleural. Pleurae pale yellow above, brown below; the thorax is only a little larger than the head. Halteres elongated and slender, pale yellow with a shining black knob. Abdomen very slender, blackish; the second joint brown with a yellow ring in the middle; second segment of the abdomen as long as the wing to the fork of the third vein or a little longer. In the male this is much less than one-half the entire length of the abdomen; in the female, however, it is a little more than one-half the entire length. Front and middle legs and all the coxae yellow; hind legs brownish-yellow with a blackish tip preceded with a yellow ring which is on the beginning of the swollen portion; hind tibiae brownish-black; hind tarsi brown. All the tarsi in both sexes are destitute of empodia and have the outer claw twice as long as the inner one. Wings hyaline, glabrous except the veins, which are distinctly hairy. The costa is ciliated from near the base to the apex with noticeably fine and dense hairs; the outer vein curves backward so as to end almost exactly in the apex of the wing. The male genitalia are very small, the visible portion consisting of a pair of small curved brown processes projecting directly backward.

Length of male, 8.4 mm., of female, 5.9 mm.

Described from one male and one female collected at Higuito, San Mateo, Costa Rica, by Pablo Schild.

Type.—Male, and allotype, female, Cat. No. 25308, U.S.N.M.

PSILONYX, new genus.

Differs from *Leptogaster* only in the complete absence of empodia.
Genotype.—*Leptogaster annulatus* Say.

PSILONYX ANNULATUS Say.

Leptogaster annulatus SAY, Journ. Acad. of Nat. Sci., vol. 3, p. 75, 1823; Complete Works, vol. 2, p. 68.—BACK, Trans. Amer. Ent. Soc., vol. 35, p. 159, 1909.

In making this species the type of a new genus I am carrying out, after the lapse of a century, a suggestion made by Say in his original publication, as follows:

The nervures of the wings of this insect, do not perfectly correspond with those of *L. tipuloides*, which circumstance, combined with another highly important difference that this insect exhibits, in having but two nails to the tarsi, would justify the generic separation of the *annulatus* from the *tipuloides*, and its reference to a distinct genus.

Specimens in the writer's collection from Ecuador do not seem to be distinct from others collected at Lafayette, Indiana. There are, however, some additional tropical species which can not at present be elucidated; and Mr. Back has described a second species from the United States, *P. schaefferi* from Brownsville, Texas.

Genus LEPTOGASTER Meigen.

Leptogaster MEIGEN, Illiger's Magazin, vol. 2, p. 269, 1803; Systematische Beschreib., vol. 2, p. 258, 1820.

Gonypes LATREILLE, Histoire nat. Crust. et Ins., vol. 14, p. 309, 1804.

Leptogaster BACK, Trans. Amer. Ent. Soc., vol. 35, p. 155, 1909.

Tipulogaster COCKERELL, The Entomologist, vol. 46, p. 213, 1913.

In the original description Meigen mentioned only *Asilus tipuloides* Fabricius, which is now regarded as a synonym of *Asilus cylindricus* DeGeer. The type of *Gonypes* is also *tipuloides*. The type of *Tipulogaster* is *badius* Loew.

There are many species of this genus, which appears to be widespread in the Eastern and Western Hemispheres, both in tropical and temperate regions.

Genus CAENAROLIA Thomson.

Caenarolia THOMSON, Kongliga Svenska Fregatten *Eugenies* Resa Omkring Jorden, vol. 2, Zoology No. 1, p. 470, 1868.

Acronyches WILLISTON, Manual of North American Diptera, ed. 3, p. 388, 1908.

Thomson described this genus from a single new species which he called *longipennis*. It was from Rio Janeiro. He refers to *miles* Wiedemann as belonging to the same genus, but gives no description of it.¹ Wiedemann's description of *miles* is so brief that it is evident that Thomson must have seen the type or he could not have assigned

¹ *Dasyopogon miles* Wiedemann, Ausereuropäische Zweiflügelige Insekten, vol. 1, p. 393, 1823, from Brazil.

it to this genus. Williston figures a species which appears to agree exactly with *longipennis* except that the fourth posterior cell is open while it is closed before the margin in Thomson's species. He mentioned this genus in this connection because it has no empodia and has many characters in common with *Leptogaster*. However, the normal development of the anal angle of the wing and especially the form of the analcell, which is almost closed in the margin, indicates a considerable divergence from the *Leptogaster* type.